



Department of Defense INSTRUCTION

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SUBJECT: Baselining of Automated Information Systems (AIS)

- References:**
- (a) DoD Directive 7920.1, "Life Cycle Management of Automated Information Systems," October 17, 1978
 - (b) DoD Instruction 7920.2, "Major Automated Information Systems Approval Process," October 20, 1978
 - (c) DoD Directive 5000.45, "Baselining of Selected Major Systems," August 25, 1986
 - (d) DoD Directive 5000.1, "Major and Non-Major Defense Acquisition Programs," September 1, 1987

A. PURPOSE

This Instruction establishes policies and prescribes procedures for baselining AIS programs that are managed as outlined in references (a) and (b). This Instruction supplements reference (c) by prescribing guidelines for major AIS.

B. APPLICABILITY AND SCOPE

This Instruction:

1. Applies to the Office of the Secretary of Defense (OSD), the Military Departments, the Organization of the Joint Chiefs of Staff (OJCS), the Unified and Specified Commands, the Inspector General of the Department of Defense (IG, DoD), the Uniformed Services University of the Health Sciences (USUHS), the Defense Agencies, and DoD Field Activities (hereafter referred to collectively as "DoD Components"). The term "Military Services," as used herein, refers to the Army, Navy, Air Force, and Marine Corps.

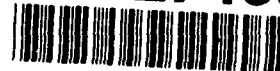
2. Applies to all AIS managed in accordance with DoD Directive 7920.1, reference (a). An AIS that meets the criteria of DoD Directive 5000.1, reference (d), shall be baselined in accordance with DoD Directive 5000.45, reference (c).

3. Does not apply to AIS that are integral to or embedded in a weapons system, or that are used exclusively for cryptologic activities.

C. DEFINITIONS

The terms used in this Instruction are defined in enclosure 1.

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D. CONCEPTS

1. Baselineing is a management technique used to help manage change and control cost growth and schedule slippage of major AIS programs. While requirements, schedule and resource changes for major AIS may be necessary, these changes must be managed. Baselineing establishes a formal agreement between the program participants and executive management. Once this agreement is signed by the program manager (PM) and, at a minimum, by the designated technical, fiscal, and functional executives, this agreement becomes a mechanism for managing program stability.

2. Properly structured program baselines shall include the following key elements:

a. Requirements. A concise statement of prioritized functional needs.

b. Program Content. A concise description of the program capabilities and products to be provided, including required technical and operational characteristics, within the funding approved.

c. Program Milestone Schedule. An established schedule for completion and delivery of important program products, including details of schedule for completion of future important events, (e.g., Milestone decision, initial operating capability (IOC), acceptance testing), and other major events that mutually may be agreed on by the PM and the principal signatories; and

d. Approved Resources. Funding necessary to satisfy the stated functional needs and to deliver the program content within the established schedule. Approved resources shall be shown by appropriation and fiscal year, expressed in then-year dollars and base-year dollars, as in the Five-Year Defense Plan (FYDP).

3. The application of program baselineing to major AIS shall improve program stability by:

a. Establishing a formal agreement in a program baseline document.

b. Using the program baseline document as a reference point from which program changes can be documented, measured, tracked, and controlled.

c. Evaluating proposed program and resource changes against the established baseline agreement, within the framework of the DoD Planning, Programming, and Budgeting System (PPBS). If funding adjustments need to be made, then associated trade-offs in program requirements and or schedule are identified and documented, and agreement is sought.

E. POLICY

1. All major AIS shall be baselined. Baselined AIS programs shall be managed with available funding to meet a specified level of capability.

2. A program baseline document shall be prepared for all baselined AIS programs. The program baseline document shall be prepared to support life-cycle management (LCM) reviews at the following decision points, as outlined in the guidelines at enclosure 2.

a. Milestone I (Concept Development). The PM shall present plans for baselining the program. Plans for baselining shall be addressed in the system decision paper (SDP) for Milestone I decision review and shall include estimated program costs, goals, and thresholds; a projected program schedule; and an approach for completing the formal program baseline document at Milestone II.

b. Milestone II (Definition and Design). The PM shall prepare a formal program baseline document before the Major Automated Information System Review Council (MAISRC) Milestone II review. The baseline document shall be submitted along with the SDP for Milestone II decision review.

c. Milestone III (System Development). The PM shall update the formal program baseline document submitted at Milestone II. The updated baseline document shall be submitted along with the SDP for Milestone III decision review.

3. Program baselines shall be reviewed periodically.

a. At a minimum, program managers annually shall review and update the program baselines, during the PPBS process.

b. The MAISRC, or other appropriate LCM review body, shall review the plan for program baselining at Milestone I, and shall review the formal baseline document during LCM Milestones II and III reviews.

c. The MAISRC, or an appropriate LCM review body, shall determine the need for a MAISRC or LCM review, on being notified of a BREACH OF BASELINE.

4. Changes to an established program baseline should be minimal. Any proposed changes resulting from LCM reviews, budgetary actions, or other program actions shall be assessed in the context of the approved baseline. Changes to the program baseline shall be made consistent with the general guidelines found at enclosure 2.

F. RESPONSIBILITIES

1. The Heads of DoD Components:

a. Shall develop implementing policies and procedures for applying the principles of baselining to all major AIS.

b. Are encouraged to apply or adapt, as appropriate, the principles of baselining to AIS that do not meet the criteria for a major AIS, as outlined in DoD Directive 7920.1 (reference (a)).

c. Shall ensure that appropriate principal signatories are designated for each program. Signatories shall include, at a minimum, responsible senior technical, fiscal, and functional senior executives.

2. The Program Manager (PM) shall:

a. Prepare and maintain the AIS program baseline document in accordance with the guidelines contained in enclosure 2.

b. Manage the program within the approved baseline agreement, conduct periodic reviews of the program baseline and update the program baseline document, at least, annually.

c. Notify the Secretary of the MAISRC or the appropriate LCM review body within 45 days of an actual or projected breach to an AIS program baseline (e.g., cost growth, schedule slippage, or modifications to approved program funding that result in a nonexecutable baseline). The PM shall describe how the breach of baseline was caused and recommend alternative courses of action.

G. EFFECTIVE DATE AND IMPLEMENTATION

This Instruction is effective immediately. Forward two copies of implementing documents to the Assistant Secretary of Defense (Comptroller) within 120 days.

Robert W. Helm

Robert W. Helm
Assistant Secretary of Defense
(Comptroller)

Enclosures - 2

1. Definitions
2. Guidelines for Preparing Program Baseline Procedures

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DEFINITIONS

1. Automated Information System (AIS). An AIS is a collection of functional user and automated data processing (ADP) personnel, software, procedures, and equipment (including ADP equipment (ADPE) that is designed, built, operated, and maintained to collect, record, process, store, retrieve, and display information (see DoD Directive 7920.1, reference (a)).
2. Breach of Baseline. A condition that occurs when the program deviates from the approved baseline. A breach of baseline occurs when the cost shown in the baseline agreement is estimated to increase by more than 15 percent during the system development phase, there is a projected schedule slippage of 90 days, or there are modifications to approved program funding which result in a nonexecutable baseline.
3. Cost Cap. The maximum amount of dollars that a DoD Component is authorized to spend on a program.
4. Deferred Program Content. Those program elements that program participants agree must be withdrawn from an approved program baseline because of fiscal constraints, but shall be re-entered to compete for resources in the PPBS at a later time. Program participants must agree that these program contents are required to satisfy a requirement stated in the program baseline.
5. Directed Baseline Deviation. A situation in which the DoD Component senior management may be required to reprogram resources from a baselined program to higher priority requirements. A directed baseline deviation may cause the program to have a nonexecutable baseline.
6. Executable Baseline. A baseline that is achievable, has sufficient approved funding, and has the support of all the program participants.
7. Implementing Command. The organization that has the program management responsibility.
8. Life-Cycle Management (LCM). The process used to manage an AIS over its entire life with emphasis on strengthening early decisions that shape AIS costs, benefits, and overall utility. These decisions must be based on full consideration of functional, ADP, and telecommunications requirements to produce an effective AIS. (DoD Directive 7920.1, reference (a)).
9. Life-Cycle Phases. The DoD AIS life-cycle phases are mission analysis and/or program initiation, concept development, definition and/or design, system development, and deployment and operation. Within each life-cycle phase, specific requirements and tasks must be satisfied, and management approval must be granted before the next life-cycle phase is begun. These decision points (described in DoD Instruction 7920.2, reference (b)) are as follows:
 - a. Milestone 0 Decision. Approval of the (MENS) by OSD permits the DoD Component to proceed to identify alternative concepts to satisfy the functional need.

b. Milestone I Decision. OSD approval allows DoD Component to proceed to definition and/or design.

c. Milestone II Decision. OSD approval permits full-scale development of the system.

d. Milestone III Decision. OSD approval allows the fully developed and tested system to proceed to deployment for operation at the operating site(s).

10. Major Automated Information System (AIS). An AIS that meets the threshold and criteria outlined in DoD Directive 7920.1 (reference (a)).

11. Major Automated Information System Review Council (MAISRC). The OSD management body that provides oversight over designated major AIS. Composition of the MAISRC is described in DoD Instruction 7920.2 (reference (b)).

12. Nonexecutable Baseline. A baseline in which the approved funding is insufficient to accomplish the program content; or one or more of the program participants cannot support or accomplish the program content.

13. Program Baseline. A description of a specific program containing the following key elements:

a. Requirements. A concise statement of prioritized functional needs.

b. Program Content. A concise description of the program capabilities and products to be provided, including required technical and operational characteristics, within the funding approved.

c. Program Milestone Schedule. Established schedule for completion and delivery of important program products, including details of program Milestones showing schedule for completion of future important events, such as Milestone decision, IOC, acceptance testing, and such other major events as mutually may be agreed on by the PM and the principal signatories.

d. Approved Resources. Funding necessary to satisfy the stated functional needs and deliver the program content within the established schedule, shown by appropriation and fiscal year, expressed in then-year dollars and base-year dollars, as in the FYDP.

14. Program Baseline Agreement. A program baseline document that has been signed by the PM and the designated signatories, consisting at a minimum, of the responsible senior technical, fiscal, and functional senior executives.

15. Program Baseline Document. A formal document that consists of a cover (signature) page, a baseline change log page, the program baseline, and a glossary.

16. Required Operational Characteristics. Qualitative and quantitative system performance parameters, proposed by the user and approved by the DoD Component, that are primary indicators of a system capability to accomplish its mission (operational effectiveness) and to be supported (operational suitability). Required operational characteristics usually are tested and evaluated by operational testing and evaluation (OT&E) to ascertain achievement of approved goals and threshold for these characteristics. Critical operational characteristics selected for major AIS program baselines are reviewed by the MAISRC.

17. Required Technical Characteristics. Quantitative system performance parameters approved by the DoD Component management, that are selected as primary indicators of technical achievement. These might not be direct measures of, but always should relate to, a system's capability to perform its required mission function and to be supported. Required technical characteristics usually are tested and evaluated by developmental testing and evaluation (DT&E) to ascertain approval goals and threshold for these characteristics. Critical technical characteristics for major AIS program baselines are reviewed by the MAISRC.

18. Zero Growth Option. A course of action in which program requirements or program content elements are adjusted without creating a need for increased program funding.

GUIDELINES FOR PREPARING PROGRAM BASELINING PROCEDURES

The following guidelines shall be used by the DoD Components in preparing their program baselining procedures.

A. ESTABLISHING AN AIS PROGRAM BASELINE

1. The PM shall prepare the program baseline document and shall submit it to the responsible senior officials for approval and signature. The approved program baseline document shall indicate an organizational commitment to support the program within the specified resources and constraints.

2. A program baseline document contains information consistent with the approved program SDP, as amended by the system decision memorandum (SDM), described in DoD Instruction 7920.2 (reference (b)). The program baseline document contains the following elements:

a. Cover Page: Contains a succinct statement of the objectives of the program baseline, a brief statement of commitments from the signatories of the baseline document specifying that the program shall be managed to satisfy the requirements within the approved funding and the established schedule, and the signatures of the principals.

b. Baseline Change Log Page: A control log that summarizes changes to the program baseline document. It should provide a brief description of the changes, including the type of change (in-cycle or out-of-cycle), cost or schedule adjustment, and cost cap, if one has been imposed.

c. Program Requirements: A statement of up-to-date, prioritized functional, operational, and supportability needs that the program is directed to satisfy.

d. Program Contents: Description of the program capabilities and products to be provided, which are structured toward meeting the approved requirements, including required technical and operational characteristics, within the approved funding and established schedule. Examples of the program content are system design, performance criteria, testing strategy, and training plan.

e. Schedule: Details of program milestones that shall show schedule for completion of future important events, such as Milestone decision, IOC, acceptance testing, and such other major events as may be agreed on mutually by the PM and the principal signatories.

f. Approved Funding: Approved funding by appropriation and fiscal year, expressed in then-year dollars and base-year dollars, as shown in the FYDP.

g. Glossary: A list of abbreviations and acronyms, to be included as needed.

h. Deferred Program Content Attachment: Elements of the program content that program participants agree must be withdrawn from the program baseline because of funding or schedule constraints, but shall be re-entered to compete for resources in the PPBS. Program participants must agree that these program contents are required to satisfy a requirement stated in the program baseline.

B. MANAGING AN AIS PROGRAM BASELINE

1. The PM shall ensure that the program is managed within the approved program baseline and shall begin corrective actions to it when it is apparent that a deviation from the approved baseline becomes imminent.

2. During the PPBS and LCM review processes, the PM shall evaluate impact of the estimated program and budget submission on the approved baseline.

3. While changes to an AIS program baseline should be minimal, they may occur under the following conditions:

a. During normal, scheduled, periodic program review, such as the PPBS process and LCM program review, routine program adjustments resulting in updates to the program baseline document may be necessary.

b. When urgent changes are required in the program, either because the program is nonexecutable, the DoD Component senior management directs a deviation from the baseline agreement, or there is an externally-directed program deviation. These urgent changes result in a restructured program baseline.

c. When a BREACH OF BASELINE occurs; i.e., the cost shown in the baseline agreement is estimated to increase by more than 15 percent during the system development phase, there is a projected schedule slippage of 90 days, or there are modifications to approved program funding which result in a non-executable baseline. A breach of baseline results in a restructured program baseline.

4. A routine program adjustment that does not cause a breach of baseline can be addressed as an IN-CYCLE CHANGE, which updates the program baseline.

a. The PM shall identify the requirements and program content adjustments that are needed to maintain a match with available funding.

b. Program contents adjustments identified during the routine program reviews, which participants agree are needed to satisfy program requirements, but cannot be met because of fiscal or schedule constraints shall be documented and identified as DEFERRED PROGRAM CONTENT in an updated program baseline document. The deferred program content shall be re-entered into the PPBS to compete for resources.

c. A baseline change log shall be included with each change to the baseline document.

5. An urgent change requires an OUT-OF-CYCLE CHANGE. This type of change can occur only as result of a non-executable baseline.

a. The PM shall describe the problem or the directed deviation, how it was caused, and recommend an alternative course of action.

b. Alternatives to be considered may include decision briefing, further analysis, or an in-process LCM review. Recommendations for corrective actions shall include a "zero-growth" option. Preparation of a new or a re-structured program baseline document shall be required.

c. The restructured program baseline document shall be resubmitted to the original signatories for approval in the same manner as a new program baseline document. The restructured baseline document shall include a baseline change log.

6. The program manager shall notify the MAISRC Executive Secretary, or the appropriate LCM review body, and other program participants of changes in the program baseline. The PM shall take the necessary action to facilitate the processing of the updated or restructured program baseline document.

7. Out-of-cycle changes to a program baseline require approval from the original signatories of the baseline document.